

A combination mechanical and magnetic support system for a flywheel power supply for storing and retrieving energy in which said power supply includes a flywheel that spins about an axis of rotation inside an evacuated chamber, and an attached motor/generator for accelerating and decelerating the flywheel for storing and retrieving the energy. One or more rolling element bearings and at least one magnetic bearing are mounted in bearing housings attached to the chamber for providing radial and axial support for the flywheel in the chamber. A wire metal mesh spring damper between portions of the rolling element bearings and the bearing housings provide both radial damping and radial centering stiffness to the wheel. The support system has a radial stiffness that allows a cylindrical rigid body resonance of said flywheel to occur at a speed less 30% of the normal operating speed. The magnetic bearings support at least than 80% of the weight of the flywheel, thereby substantially extending the life the of the rolling element bearings.

REMARKS

Applicant respectfully requests reconsideration of this application as amended herein.

The Examiner has objected to the Abstract because of the misspelling of the word "flywheel". A new abstract is submitted herewith to correct the spelling of that word.

Claims 1, 2, 4-9, 11 and 12 have been rejected under 35 USC 103 as unpatentable over Henry et al. Henry shows a combination mechanical and magnetic support for a gas turbine engine that converts fuel to rotational energy. Henry's gas turbine engine does not store and retrieve kinetic energy inside an evacuated container. A gas turbine engine could not operate inside an evacuated chamber.

Henry does not show the claimed combination of a mechanical and magnetic support system for a flywheel power supply for storing and retrieving energy in which the power supply includes a flywheel that spins about an axis of rotation inside an evacuated container, an attached motor/generator means provided for accelerating